

**CHESAPEAKE FOREST HERBICIDE RELEASE - 2007**

<b>Type of Release</b>	<b>Acres</b>	<b>Rate</b>	<b>Comments</b>
Mid- Rotation Release	63	4 oz Arsenal + 4 oz Oust Extra	Release skipped year it was planned as it appeared as if it didn't need it. Returned in 2007 as greenbriar and woody plants were overtaking the understory in this general management area. Very low rate of Arsenal, added Oust Extra for grass and greenbriar control.
Natural Regeneration Release	26	6 oz Arsenal + 4 oz Oust Extra	Acceptable natural pine regeneration struggling in heavy grass, blackberry, some maple and sweetgum. Low rate of Arsenal, controlled some but not all of the gum, controlled grass and pines now look good.
Invasive Species Control	302	4 or 6 oz of Arsenal + 0 or 2 oz of Oust XP	4 different rates tried on windrows covered with Mile-a-minute in thinned pine plantation in an effort to determine the best rate to control this invasive.
Invasive Species Control	40	4 oz Arsenal + 2 oz of Oust XP	Final harvest area overrun with Mile-a minute. This was a second application with a different rate as 1st try didn't work well.

**CHESAPEAKE FOREST HERBICIDE RELEASE - 2008**

<b>Type of Release</b>	<b>Acres</b>	<b>Rate</b>	<b>Comments</b>
Mid-Rotation Release	18	8 oz Arsenal + 1 oz Escort XP	Actually old shelterwood with very thick understory with mixture of hardwoods and heavy greenbriar. Goal of release was to reduce stocking in understory (not 100% control), control greenbriar, leaving the vertical structure in this open Pine stand.
Mid-Rotation Release	17	12 Oz Arsenal	Much larger area of release planned for this naturally regenerated pine stand. Areas that were mostly hardwood were skipped, areas where pines dominated but with heavy hardwood competition.
Natural Regeneration Release	106	10 oz Arsenal + 4 oz Oust Extra	3 sites with good pine regeneration all in General Management Zones, but with some gum/maple competition and heavy grass problems. Goal was to reduce hardwoods (not 100%) and control grass for a year or two in order for pines to get started.
Natural Regeneration Release	20	6 oz Arsenal	This was a portion of one of the sites above, but had significant oaks and some poplar mixed with pine regeneration. Goal was to control hardwoods with minimal damage to oaks. Also released a one acre Atlantic Whitecedar plantation within this area.

**CHESAPEAKE FOREST HERBICIDE RELEASE - 2009**

Mid-Rotation Release	75	12 oz Arsenal + 1 oz Escort XP	Two thinned stands with significant greenbriar gum/maple in the understory.
Mid-Rotation Release	19	8 oz Arsenal	Thinned stand with oak as well as other hardwoods in the understory. Goal was to reduce gum/maple competition while maintaining oaks.
Site Preparation	56	10 oz Arsenal + 4 oz Oust Extra	Two final harvest sites in General Mgt. Zones with no significant regeneration and heavy grass competition. Goal to control both woody stems and grass for a spring 2010 planting.
Site Preparation / Natural Release	38	*24 oz Chopper + 3 oz Oust XP	Area with some pine regeneration competing with heavy grass as well as some areas with no regen where we plan to replant with oaks. This is an experiment to see how well planted oaks will do in a site prep sprayed application.
Site Preparation/Invasive Control	60	*24 oz Chopper + 3 oz Oust XP + 2 qts Glyphosate	Final harvest areas with very little regeneration, heavy grass as well as phragmite and mile-a-minute. Goal to control invasives while preparing site for planting of both pine and oaks (as in experiment above). Ideally we'd like to burn this area before planting in spring to see if the herbicide followed by burn helps control mile-a-minute.

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\* Chopper is an Imazapyr (Arsenal) formulation at 1/2 the concentration. 24 oz of Chopper is equivalent to 12 oz of Arsenal but provides better coverage.

Generally speaking our spray applications are never 100% of the areas set up in the plan. By the time we leave roadside and ditch buffers as well as windrows or isolated patches of hardwood if feasible. For instance the tracts sprayed in 2009 were in final harvests, thinnings, etc that totaled 294 Acres. Instead only 248 acres were sprayed. When you look down this list it's evident that the herbicide program is not a one size fits all program.

The herbicide contractor will not guarantee any work less than 12oz of Arsenal per acre and 16oz Arsenal to 48 oz of Chopper are probably more the norm in intensively managed forestland in the deeper south. They've learned that we don't really care about the guarantee, which in turn allows them to get more creative with suggestions.